

AMENDMENTS TO CLAIMS

Please cancel claims 42-89, as shown in the following complete list of claims.

1. (Original) An isolated silk polypeptide comprising a plurality of repetitive units and a non-repetitive hydrophilic amino acid domain.
2. (Original) The silk polypeptide of claim 1, wherein at least two repetitive units are present in a head-to-tail configuration.
3. (Original) The silk polypeptide of claim 1, wherein the repetitive units are present in a head-to-tail configuration.
4. (Original) The silk polypeptide of claim 1, wherein at least two repetitive units are present in a head-to-head configuration.
5. (Original) The silk polypeptide of claim 1, wherein all the repetitive units are present in a head-to-head configuration.
6. (Original) The silk polypeptide of claim 1 comprising at least about 2 to about 4 repetitive units.
7. (Original) The silk polypeptide of claim 1 comprising at least about 5 to about 10 repetitive units.
8. (Original) The silk polypeptide of claim 1 comprising at least about 10 to about 50 repetitive units.
9. (Original) The silk polypeptide of claim 1 comprising at least about 50 to about 100 repetitive units.
10. (Original) The silk polypeptide of claim 1, wherein at least two of the repetitive units are contiguous.

11. (Original) The silk polypeptide of claim 10, wherein the repetitive units are contiguous.
12. (Original) The silk polypeptide of claim 1, wherein at least two of the repetitive units are separated by an amino acid spacer.
13. (Original) The silk polypeptide of claim 12, wherein the repetitive units are separated from each other by an amino acid spacer.
14. (Original) The silk polypeptide of claim 12, wherein the amino acid spacer is 1 to about 10 amino acids in length.
15. (Original) The silk polypeptide of claim 1, wherein the repetitive units comprise amino acid sequences forming a secondary structure selected from the group consisting of: β turn spiral, crystalline β sheet, and 3_{10} helix.
16. (Original) The silk polypeptide of claim 1, wherein a repetitive unit comprises a repetitive unit found within an spider or insect silk polypeptide.
17. (Original) The silk polypeptide of claim 1, wherein each repetitive unit independently comprises a repetitive unit found within *Nephila clavipes* or *Araneus diadematus* spider silk polypeptides or *Bombyx mori* cocoon silk polypeptides.
18. (Original) The silk polypeptide of claim 1, wherein the repetitive units comprise iterated peptide motifs selected from the group consisting of the amino acid sequences identified as SEQ ID NOS:4-27.
19. (Original) The silk polypeptide of claim 1, wherein the amino acid sequence of each repetitive unit is independently selected from the amino acid sequences of repetitive units found within the group consisting of ADF-1, ADF-2, ADF-3, ADF-4, ABF-1, MaSpI, MaSpII, MiSpI, MiSpII, and Flag.

20. (Original) The silk polypeptide of claim 19, wherein the amino acid sequence of each repetitive unit is selected from the group of amino acid sequences identified as SEQ ID No:1, SEQ ID No:2, and SEQ ID No:3.
21. (Original) The silk polypeptide of claim 19, wherein at least one of the native repetitive regions has an amino acid sequence that is in a reversed order in comparison to the naturally-occurring amino terminus to carboxyl terminus amino acid sequence.
22. (Original) The silk polypeptide of claim 1, wherein the repetitive units comprise a plurality of iterated peptide motifs selected from the group consisting of: GPG(X)_n , $(\text{GA})_n$, A_n , and GGX ,
where X represents the amino acid A, Q, G, L, S, Y or V, and
 n represents an integer from 1 to about 8.
23. (Original) The silk polypeptide of claim 1, wherein at least two of the repetitive units have identical amino acid sequences.
24. (Original) The silk polypeptide of claim 1, wherein the repetitive units have non-identical amino acid sequences.
25. (Original) The silk polypeptide of claim 1, wherein the non-repetitive hydrophilic amino acid domain is towards the carboxyl terminus with respect to the repetitive units.
26. (Original) The silk polypeptide of claim 1, wherein the non-repetitive hydrophilic amino acid domain is towards the amino terminus with respect to the repetitive units.
27. (Original) The silk polypeptide of claim 1, wherein the non-repetitive hydrophilic amino acid domain is between two of the repetitive units.
28. (Original) The silk polypeptide of claim 27, further comprising a proteolytic site, wherein cleavage at the proteolytic site separates a non-repetitive hydrophilic amino acid domain from a repetitive unit.

29. (Original) The silk polypeptide of claim 27, further comprising a first proteolytic site and a second proteolytic site, wherein cleavage at the first proteolytic site and at the second proteolytic site separates the non-repetitive hydrophilic amino acid domain from the repetitive units.
30. (Original) The silk polypeptide of claim 1, further comprising a plurality of non-repetitive hydrophilic amino acid domains wherein the plurality is at least about 2 to about 4 non-repetitive hydrophilic amino acid domains.
31. (Original) The silk polypeptide of claim 1, wherein the non-repetitive hydrophilic amino acid domain is selected from the group consisting of non-repetitive carboxyl terminal regions from MaSpI, MaSpII, ABF-1, ADF-1, ADF-2, ADF-3, ADF-4, and Flag.
32. (Original) The silk polypeptide of claim 1, wherein the non-repetitive hydrophilic amino acid domain is about 20 to about 150 amino acids.
33. (Original) The silk polypeptide of claim 1 further comprising a proteolytic site, wherein cleavage at the proteolytic site results in the separation of the non-repetitive hydrophilic amino acid domain from a repetitive unit.
34. (Original) The silk polypeptide of claim 1 further comprising a proteolytic site, wherein cleavage at the proteolytic site results in the separation of the non-repetitive hydrophilic amino acid domain from the repetitive units.
35. (Original) The silk polypeptide of claim 34, wherein the proteolytic site is subject to cleavage by a protease.
36. (Original) The silk polypeptide of claim 34, wherein the proteolytic site is subject to cleavage by chemical treatment.
37. (Original) The silk polypeptide of claim 1 further comprising a secretory signal peptide sequence.
38. (Original) The silk polypeptide of claim 1 further comprising a c-myc epitope.

39. (Original) The silk polypeptide of claim 1 further comprising a histidine tag.
40. (Original) The silk polypeptide of claim 1, wherein the silk polypeptide has a molecular weight between about 16,000 daltons and about 800,000 daltons.
41. (Original) The silk polypeptide of claim 1 wherein the silk polypeptide precipitates and redissolves in an aqueous buffer.
- 42.-89. (Canceled).